



31 July 2006

Mr. Matt McClincy
Oregon Department of Environmental Quality
Northwest Region
2020 Southwest Fourth Avenue
Suite 400
Portland, Oregon 97201-4987

Subject: Request for Upland Dioxin Sampling
Arkema Inc., Portland Facility

Dear Mr. McClincy:

Legacy Site Services LLC (LSS) has prepared this letter to request approval for a plan to sample for dioxins/furans in storm water catch basins and groundwater at the Arkema Inc., Portland facility (the Site) in Portland, Oregon. This plan has been prepared in response to the Oregon Department of Environmental Quality (ODEQ) letter dated June 14, 2006 requesting Arkema/LSS submit a work plan to screen for dioxin/furans at the Site.

The proposed scope of work for the storm water catch basin and groundwater sampling are presented below.

Storm Water Catch Basin Sampling

In the ODEQ's letter dated June 14, 2006, ODEQ stated that a screening option acceptable to ODEQ for soil would be to include the analysis for dioxins/furans in the pending characterization of catch basin sediments. Therefore, LSS proposes to addend the *Stormwater Interim Remedial Measures Work Plan – Final* (Stormwater IRM Work Plan) as follows:

1. Include, as part of Section 3.3 of the Stormwater IRM Work Plan, collecting samples for analysis of dioxins/furans from the following catch basins; CB-004-01, CB-004-02, CB-003-01, CB-003-07, CB-002-01, CB-002-03, CB-001-05, and CB-001-04, as presented in Figure 1 of the Stormwater IRM Work Plan.

2. Addend the Quality Assurance Project Plan (QAPP) in Appendix B of the Stormwater IRM Work Plan as per Attachment A to this letter.

As acknowledged by ODEQ in the June 14, 2006 letter, sampling may detect dioxins/furans that are a result of non-site-related anthropogenic activities. Therefore, LSS request the results of the sampling proposed herein be evaluated in the context of locally- or regionally-available background data for dioxins/furans. We will discuss the availability and suitability of these data with ODEQ prior to presentation of the results of this sampling.

Groundwater Sampling

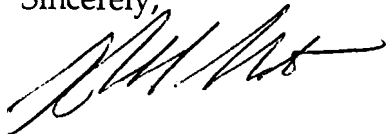
LSS proposes sampling of the following eleven monitoring wells: MWA-2, MWA-4, MWA-6R, MWA 10i, MWA-15R, MWA-16i, MWA-30, MWA-32i, MWA-46, MWA-63, and MWA-67si. These wells will be sampled in accordance with the Field Sampling Plan in the RI/FS Work Plan (Exponent 1998), including well purging, field parameter collection, and quality control/assurance protocols. Samples for dioxin/furan analysis will be taken directly from the tubing and collected in two 1-liter amber glass bottles. Sample labeling, shipping and chain of custody procedures will be in accordance with the Field Sampling Plan (Exponent 1998). The samples will shipped to STL Inc. laboratories in Sacramento, California, or alternative accredited laboratory, for analysis of dioxins/furans under EPA Method SW8290.

The data quality objectives (DQOs) of this sampling program will follow those detailed in the overall Site QAPP that is part of the Field Sampling Plan (Exponent, 1998). The quantitative DQOs for the specific dioxin/furans analysis are detailed in the QAPP Addendum (Attachment B).

We propose to conduct the groundwater sampling during August 2006, immediately following your approval of this work. The catch basin sampling will be performed in conjunction with the Storm Water IRM sampling. Any proposed changes to the sampling plan will be submitted to ODEQ for review and approval prior to commencement of field activities.

If you have any questions or require additional information, please feel free to contact us at (610) 594-4430.

Sincerely,

A handwritten signature in black ink, appearing to read "J Todd Slater", with a stylized flourish at the end.

J Todd Slater
Legacy Site Service LLC

cc: Larry Patterson/ERM
Erik Ipsen/ERM
David Livermore/Integral

Attachments

Attachment A

Addendum to the Stormwater Interim Remedial Measures Work Plan Appendix B - Quality Assurance Project Plan

Introduction

This attachment will serve as an addendum to Appendix B – Quality Assurance Project Plan (QAPP) of the Stormwater Interim Measures Work Plan. The attached tables from the project QAPP have been updated to include information on the addition of polychlorinated dibenzo-p-dioxins/furans (PCDD/Fs) to the project scope.

Task Description

Eight catch basin sediment samples will be collected and analyzed for PCDD/Fs. Additional field quality control samples will be collected with the natural samples at the frequency stated in the project QAPP. The total number of samples to be collected, including field quality control samples, is detailed in Table A5-1. Sample container and sample preservation information for the additional PCDD/F samples is detailed in Table B2-1.

Samples will be sent to Columbia Analytical Services (CAS; Houston, Texas) for analysis. Samples will be prepared and analyzed by high-resolution gas chromatography/high-resolution mass spectrometry (HRGC/HRMS), according to EPA Method 1613B (Table A5-2).

Measurement quality objectives (MQOs) for the quantitative PARCC (precision, accuracy, representativeness, completeness, and comparability) parameters are provided in Table A6-1. Target PCDD/F method reporting limits (MRLs) for the catch basin sediment samples are summarized in Table A6-3. Data generated in the field and at the laboratory will be handled as detailed in the Data Management section (Section B9) of the Stormwater QAPP (Appendix B of the Stormwater Work Plan). Data will be verified and validated according to criteria and procedures described in the Data Validation and Usability section (Section D) of the Stormwater QAPP and by the EPA Region 10 SOP for the Validation of Polychlorinated Dibenzodioxin (PCDD) and Polychlorinated Dibenzofuran (PCDF) Data (U.S. EPA, Region 10, Environmental Services Division, Seattle, Washington).

Table A5-1. Summary of Samples and Chemical Analyses.

Analysis	Number of Samples				Total
	Field Samples ¹	Field Duplicates ²	Equipment Rinse Blanks ²	DI Water Blank ²	
Stormwater					
COIs					
Total suspended solids (TSS)	4	1	1	1	7
Total perchlorate	4	1	1	1	7
Total and dissolved manganese	8	2	2	2	14
Total hexavalent chromium	4	1	1	1	7
Total and dissolved 4,4'-DDTs ³	8	2	2	2	14
Additional Analytes ⁴					
PCB Aroclors	4	1	1	1	7
PAHs	4	1	1	1	7
Pentachlorophenol	4	1	1	1	7
Catch Basin Sediment					
COIs					
Total solids	40	2	2	2	46
Grainsize	40	2	2	2	46
Perchlorate	40	2	2	2	46
Manganese	40	2	2	2	46
Hexavalent chromium	40	2	2	2	46
4,4'-DDTs ³	40	2	2	2	46
Additional Analytes					
PCB Aroclors	40	2	2	2	46
PAHs	40	2	2	2	46
Pentachlorophenol	40	2	2	2	46
Phthalate esters	40	2	2	2	46
Dioxin/furans	8	1	1	1	11
Optional Sampling					
Stormwater particle size	4	1	0	0	5
Surface soil ⁵	--	--	--	--	--

Notes:

¹ Number of samples to be collected per round of sampling. There will be 1 round of sampling for catch basin sediments and 4 rounds of sampling for stormwater.

² Field QC samples will be collected at a frequency of 10% of the sample total.

³ Includes 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD.

⁴ Additional analytes listed for stormwater will be analyzed only if they are present in their associated catch basin sediments. Number of samples are approximate and may change based on the outcome of the catch basin sediment sampling.

⁵ Number of surface soil samples to be determined pending the results of the catch basin sampling.

COIs - chemicals of interest

DI - deionized

PAHs - polycyclic aromatic hydrocarbons

PCB - polychlorinated biphenyl

Table A5-2. Laboratory Methods.

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Stormwater					
COIs					
Conventional Analyses					
Total suspended solids (TSS)	CAS - Kelso	EPA 160.2	Filtration and drying	EPA 160.2	Gravimetric
Inorganic Analyses					
Total perchlorate	CAS - Kelso	EPA 314.0	Filtration, 0.45 mm filter, if needed	EPA 314.0	Ion chromatography
Total hexavalent chromium	CAS - Kelso	EPA 7195	Coprecipitation	EPA 7191	GFAAS
Metals					
Total/dissolved manganese	CAS - Kelso	EPA 3005	Acid digestion	EPA 6010B	ICP-AES
Organochlorine Pesticides					
Total/dissolved 4,4'-DDTs ¹	CAS - Kelso	EPA 3550B EPA 3630C EPA 3660B EPA 3620B	Sonication Silica gel cleanup Sulfur cleanup Florisil® cleanup	EPA 8081A	Dual column GC/ECD
Additional Analytes ²					
PCB Aroclors	CAS - Kelso	EPA 3520 EPA 3665A EPA 3620B EPA 3660B	Continuous liquid-liquid extraction Sulfuric acid cleanup Florisil® cleanup Sulfur cleanup	EPA 8082	GC/ECD
PAHs and pentachlorophenol	CAS - Kelso	EPA 3520C	Continuous liquid-liquid extraction	EPA 8270C	GC/MS - SIM
Catch Basin Sediment					
COIs					
Conventional Analyses					
Total solids	CAS - Kelso	—	—	PSEP 1986	Gravimetric
Grainsize	CAS - Kelso	—	—	ASTM D422-63	Sieve/hydrometer
Inorganic Analyses					
Perchlorate	CAS - Kelso	EPA 314.0	DI water leach	EPA 314.0	Ion chromatography
Hexavalent chromium	CAS - Kelso	EPA 3060A	Alkaline digestion	EPA 7196A	Colorimetry
Metals					
Manganese	CAS - Kelso	EPA 3050B	Acid digestion	EPA 6010B	ICP-AES
Organochlorine Pesticides					
4,4'-DDTs ¹	CAS - Kelso	EPA 3550B EPA 3630C EPA 3660B EPA 3620B	Sonication Silica gel cleanup Sulfur cleanup Florisil® cleanup	EPA 8081A	Dual column GC/ECD

Table A5-2. Laboratory Methods.

Analytes	Laboratory	Sample Preparation		Quantitative Analysis	
		Protocol	Procedure	Protocol	Procedure
Additional Analytes					
PCB Aroclors	CAS - Kelso	EPA 3545 EPA 3665A EPA 3620B EPA 3660B	Pressurized fluid extraction Sulfuric acid cleanup Florisil® cleanup Sulfur cleanup	EPA 8082	GC/ECD
PAHs, pentachlorophenol, and phthalate esters	CAS - Kelso	EPA 3550B EPA 3640A EPA 3630C	Sonication extraction Gel permeation chromatography Silica gel cleanup	EPA 8270C	GC/MS - SIM
Dioxins/furans	CAS - Houston	EPA 1613B	Soxhlet/Dean Stark extraction Sulfuric acid cleanup Silica/carbon column cleanup	EPA 1613B	HRGC/HRMS

Notes:

¹ Includes the analysis of 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD.

² Additional analytes listed for stormwater will be analyzed only if they are present in their associated catch basin sediments. Number of samples are approximate and may change based on the outcome of the catch basin sediment sampling.

CAS - Columbia Analytical Services

COIs - chemicals of interest

DI - deionized

EPA - U.S. Environmental Protection Agency

ICP/AES - inductively coupled plasma/atomic emission spectrometry

GC/ECD - gas chromatography/electron capture detection

GC/MS - gas chromatography/mass spectrometry

GFAAS - graphite furnace atomic absorption spectrometry

PAHs - polycyclic aromatic hydrocarbons

PCB - polychlorinated biphenyl

SIM - selected ion monitoring

Table A6-1. Measurement Quality Objectives .

Analysis	Bias (percent)	Precision (RPD)	Completeness (percent)
Stormwater Samples			
COIs			
Total suspended solids	85-115	± 20	95
Total perchlorate	80-120	± 20	95
Total hexavalent chromium	85-115	± 20	95
Total/dissolved manganese	55-155	± 20	95
Total/dissolved 4,4'-DDTs ¹	40-130	± 30	95
Additional Analytes ²			
PCB Aroclors	10-160	± 30	95
PAHs and pentachlorophenol	10-150	± 30	95
Catch Basin Sediment Samples			
COIs			
Total solids	--	± 20	95
Grainsize	--	--	95
Perchlorate	80-120	± 20	95
Hexavalent chromium	85-115	± 20	95
Manganese	25-180	± 30	95
4,4'-DDTs ¹	30-160	± 40	95
Additional Analytes			
PCB Aroclors	30-160	± 40	95
PAHs, pentachlorophenol, and phthalate esters	20-150	± 40	95
Dioxin/furans	50-150	± 30	95

Notes:

¹ Includes 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD.

² Additional analytes listed for stormwater will be analyzed only if they are present in their associated catch basin sediments. Number of samples are approximate and may change based on the outcome of the catch basin sediment sampling.

COIs - chemicals of interest

PAHs - polycyclic aromatic hydrocarbons

PCB - polychlorinated biphenyl

RPD - relative percent difference

Table A6-3. Analytes and Method Reporting Limits for Catch Basin Sediment Samples.

Analyte	CAS number ¹	Units ²	JSCS ³	MDL ⁴	MRL ⁵
			Screening Level Values		
COIs					
Conventional Analyses					
Total solids	--	percent			
Grainsize	--	percent			
Inorganic Analyses					
Perchlorate	14797-73-0	µg/kg	--	2	20
Hexavalent chromium	18540-29-9	µg/kg	--	0.05	0.5
Metals					
Manganese	7439-96-5	µg/kg	1100	0.3	1
Organochlorine Pesticides					
4,4'-DDD	72-54-8	µg/kg	0.3	0.093	1
4,4'-DDE	72-55-9	µg/kg	0.3	0.076	1
4,4'-DDT	50-29-3	µg/kg	0.3	0.17	1
Additional Analytes					
PCB Aroclors					
Aroclor 1016	12674-11-2	µg/kg	420	1.8	10
Aroclor 1221	11104-28-2	µg/kg		1.8	10
Aroclor 1232	11141-16-5	µg/kg	--	1.8	10
Aroclor 1242	53469-21-9	µg/kg	2	1.8	10
Aroclor 1248	12672-29-6	µg/kg	4	1.8	10
Aroclor 1254	11097-69-1	µg/kg	10	1.8	10
Aroclor 1260	11096-82-5	µg/kg	200	1.8	10
Aroclor 1262	37324-23-5	µg/kg		1.8	10
Aroclor 1268	11100-14-4	µg/kg		1.8	10
PAHs and pentachlorophenol					
Acenaphthene	83-32-9	µg/kg	300	0.16	5
Acenaphthylene	208-96-8	µg/kg	200	0.22	5
Anthracene	120-12-7	µg/kg	845	0.22	5
Benzo(a)anthracene	56-55-3	µg/kg	1050	0.16	5
Benzo(b)fluoranthene	205-99-2	µg/kg	--	0.48	5
Benzo(k)fluoranthene	207-08-9	µg/kg	13000	0.33	5
Benzo(g,h,i)perylene	191-24-2	µg/kg	300	0.23	5
Benzo(a)pyrene	50-32-8	µg/kg	1450	0.22	5
Chrysene	218-01-9	µg/kg	1290	0.41	5
Dibenz(a,h)anthracene	53-70-3	µg/kg	1300	0.26	5
Fluoranthene	206-44-0	µg/kg	2230	0.34	5
Fluorene	86-73-7	µg/kg	536	0.19	5
Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	100	0.24	5
2-Methylnaphthalene	91-57-6	µg/kg	200	0.34	5
Naphthalene	91-20-3	µg/kg	561	0.34	5
Phenanthrene	85-01-8	µg/kg	1170	0.33	5
Pyrene	129-00-0	µg/kg	1520	0.36	5
Pentachlorophenol	87-86-5	µg/kg	1000	15	200
Phthalate Esters					
Dimethyl phthalate	131-11-3	µg/kg	--	1.8	10
Diethyl phthalate	84-66-2	µg/kg	600	3.5	10
Di-n-butyl phthalate	84-74-2	µg/kg	100	2.6	10
Butylbenzyl phthalate	85-68-7	µg/kg	--	1.5	10
Di-n-octyl phthalate	117-84-0	µg/kg	--	1.2	10
Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	330	1.7	200

Table A6-3. Analytes and Method Reporting Limits for Catch Basin Sediment Samples.

Analyte	CAS number ¹	Units ²	JSCS ³	MDL ⁴	MRL ⁵
			Screening Level Values		
Dioxins/furans					
2,3,7,8-TCDD	1746-01-6	ng/kg	0.85	9.85	1.0
2,3,7,8-TCDF	51207-31-9	ng/kg	--	7.89	1.0
1,2,3,7,8-PeCDD	40321-76-4	ng/kg	--	29.18	2.5
1,2,3,7,8-PeCDF	57117-41-6	ng/kg	--	29.55	2.5
2,3,4,7,8-PeCDF	57117-31-4	ng/kg	--	29.6	2.5
1,2,3,4,7,8-HxCDD	39227-28-6	ng/kg	--	33.39	2.5
1,2,3,6,7,8-HxCDD	57653-85-7	ng/kg	--	18.86	2.5
1,2,3,7,8,9-HxCDD	19408-74-3	ng/kg	--	58.75	2.5
1,2,3,4,7,8-HxCDF	70648-26-9	ng/kg	--	26.95	2.5
1,2,3,6,7,8-HxCDF	57117-44-9	ng/kg	--	14.35	2.5
1,2,3,7,8,9-HxCDF	72918-21-9	ng/kg	--	30.55	2.5
2,3,4,6,7,8-HxCDF	60851-34-5	ng/kg	--	19.01	2.5
1,2,3,4,6,7,8-HpCDD	35822-46-9	ng/kg	--	25.35	2.5
1,2,3,4,6,7,8-HpCDF	67562-39-4	ng/kg	--	13.59	2.5
1,2,3,4,7,8,9-HpCDF	55673-89-7	ng/kg	--	24.07	2.5
OCDD	3268-87-9	ng/kg	--	119.35	5.0
OCDF	39001-02-0	ng/kg	--	144.72	5.0

Notes:

- ¹ CAS registry numbers are unique numerical identifiers for chemical compounds. They are also referred to as CAS numbers, CAS RNs or CAS #s. Chemical Abstracts Service (CAS), a division of the American Chemical Society, assigns these identifiers to every chemical that has been described in the literature. The intention is to make database searches more convenient, as chemicals often have many names. Almost all molecule databases today allow searching by CAS number.
- ² All units expressed on a dry weight basis.
- ³ JSCS - Joint Source Control Strategy. DEQ and USEPA. 2005. Portland Harbor Joint Source Control Strategy, Final, December 2005. Oregon Department of Environmental Quality and U.S. Environmental Protection Agency. <http://www.deq.state.or.us/nwr/PortlandHarbor/jscs.htm>.
- ⁴ The laboratory's current MDL is provided when an MDL study has been completed for the proposed method. When no MDL is provided, the laboratory will complete an MDL study prior to analysis of samples for this project.
- ⁵ The MRL is provided on a dry-weight basis and assumes 50% moisture in the samples. The MRL for project samples will vary with moisture content in the samples.

MDL - method detection limit

MRL - method reporting limit

Table B2-1. Sample Containers and Preservation Requirements.

Analysis	Laboratory	Container		Preservation	Holding Time
		Type	Size		
Stormwater					
COIs					
Total suspended solids	CAS	HDPE	1 L	4 ± 2°C	7 days
Total perchlorate	CAS	HDPE	500 mL	4 ± 2°C	28 days
Total manganese	CAS	HDPE	500 mL	1 mL of 1:1 HNO ₃ ; 4 ± 2°C	6 months
Dissolved manganese	CAS	HDPE	500 mL	1 mL of 1:1 HNO ₃ ; 4 ± 2°C	6 months
Total hexavalent chromium	CAS	HDPE	500 mL	4 ± 2°C	24 hours
Total 4,4'-DDTs ¹	CAS	AG	1 L	4 ± 2°C	7 / 40 days ²
Dissolved 4,4'-DDTs ¹	CAS	AG	1 L	4 ± 2°C	7 / 40 days ²
Additional Analytes ³					
PCB Aroclors	CAS	AG	1 L	4 ± 2°C	7 / 40 days ²
PAHs and pentachlorophenol	CAS	AG	1 L	4 ± 2°C	7 / 40 days ²
Catch Basin Sediments					
COIs					
Total solids	CAS	WMG	8 oz.	4 ± 2°C	6 months
Grainsize	CAS	WMG	8 oz.	4 ± 2°C	6 months
Perchlorate	CAS	WMG	2 oz.	4 ± 2°C	28 days
Manganese	CAS	WMG	8 oz.	4 ± 2°C	6 months ⁴
Hexavalent chromium	CAS	WMG	8 oz.	4 ± 2°C	28 days
4,4'-DDTs ¹	CAS	WMG	8 oz.	4 ± 2°C	14 / 40 days ^{4,5}
Additional Analytes					
PCB Aroclors	CAS	WMG	8 oz.	4 ± 2°C	14 / 40 days ^{4,5}
PAHs and pentachlorophenol	CAS	WMG	8 oz.	4 ± 2°C	14 / 40 days ^{4,5}
Phthalate esters	CAS	WMG	8 oz.	4 ± 2°C	14 / 40 days ^{4,5}
Dioxins/furans	CAS	WMG	8 oz.	4 ± 2°C	14 / 40 days ^{4,5}

Notes:

¹ Includes 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT.

² The holding time is 7 days from collection to extraction and 40 days from extraction to analysis.

³ Additional analytes listed for stormwater will be analyzed only if they are present in their associated catch basin sediments.
Number of samples are approximate and may change based on the outcome of the catch basin sediment sampling.

⁴ Holding time for frozen samples is 1 year.

⁵ The holding time is 14 days from collection to extraction and 40 days from extraction to analysis.

CAS - Columbia Analytical Services

AG - amber glass

HDPE - high density polyethylene

HNO₃ - nitric acid

WMG - wide mouth glass

Attachment B

*Addendum to Elf Atochem Acid Plant Area Remedial
Investigation and Feasibility Study Work Plan
Appendix - Quality Assurance Project Plan*

Introduction

This attachment will serve as an addendum to the Quality Assurance Project Plan (QAPP) in Appendix B of the Remedial Investigation and Feasibility Study Work Plan (Exponent, 1998). This document has been prepared to include sampling groundwater for polychlorinated dibenzo-p-dioxins/furans (dioxin/furans) in the project scope.

Field Operations

As described in the Field Sampling Plan, in Appendix A of the Remedial Investigation and Feasibility Study Work Plan (Exponent, 1998), the depth to groundwater will be measured in the monitoring wells prior to sampling. The monitoring wells will be purged and field parameters collected as per the Field Sampling Plan. A sample of the groundwater will be collected directly in two 1-liter, unpreserved, amber glass bottles. Sample labeling, shipping and chain of custody procedures will be in accordance with the QAPP. The samples will be shipped to STL Inc. laboratories in Sacramento, California for analysis of dioxins/furans under EPA Method SW8290.

Data Quality Objectives

The quantitative data quality objectives (DQOs) for the dioxin/furan analysis are presented in Table 1. The laboratory control limits are specific to each compound in the analyte list, and depend on historical data.

Field quality control samples, including duplicates and blanks will be collected as per the QAPP at a frequency of at least 1 set of quality control samples for every 20 field samples. Field samples have a maximum hold time of 30 days under EPA Method SW8290.

Table 1 *Data Quality Objectives*

Analytical Method	Analytes	MRL (pg/L)	MDL (pg/L)	Bias (%)^a	Precision (% RPD)^a	Completeness (%)
STL SW8290	2,3,7,8-TCDF	10	5	67-140	23	95
	2,3,7,8-TCDD	10	5	72-137	20	95
	1,2,3,7,8-PeCDF	50	25	77-131	20	95
	2,3,4,7,8-PeCDF	50	25	65-137	32	95
	1,2,3,7,8-PeCDD	50	25	65-141	20	95
	1,2,3,4,7,8-HxCDF	50	25	75-131	24	95
	1,2,3,6,7,8-HxCDF	50	25	69-141	32	95
	2,3,4,6,7,8-HxCDF	50	25	68-170	49	95
	1,2,3,7,8,9-HxCDF	50	25	65-158	54	95
	1,2,3,4,7,8-HxCDD	50	25	54-147	20	95
	1,2,3,6,7,8-HxCDD	50	25	70-133	20	95
	1,2,3,7,8,9-HxCDD	50	25	68-147	33	95
	1,2,3,4,6,7,8-HpCDF	50	25	77-129	20	95
	1,2,3,4,7,8,9-HpCDF	50	25	69-139	21	95
	1,2,3,4,6,7,8-HpCDD	50	25	75-130	20	95
	OCDF	100	50	67-140	23	95
	OCDD	100	50	78-127	20	95

Notes: Source STL Inc.

a) Laboratory control limits are specific to each compound and depend on historical data.

RPD = Relative Percent Difference

MRL = Method Reporting Limit, equal to the lowest calibration standard concentration

MDL = Method Detection Limit, equal to one-half the MRL

pg/L = picograms per liter